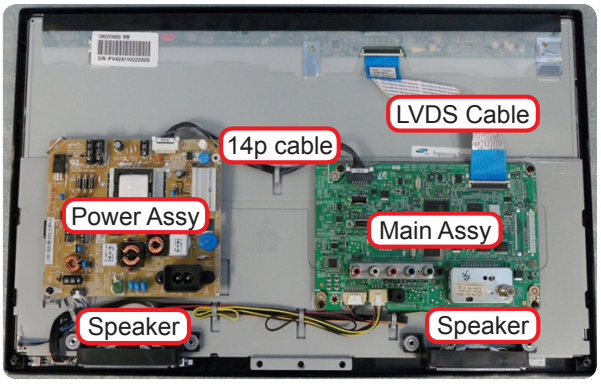
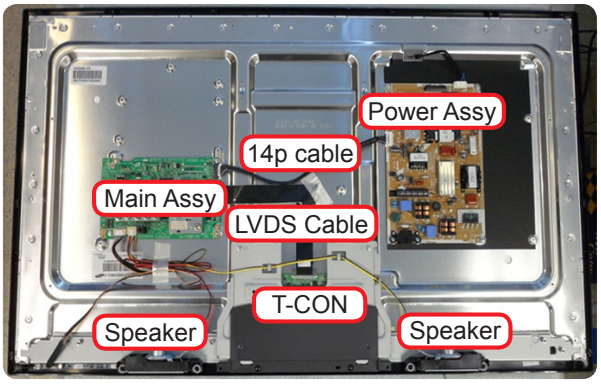
4. Troubleshooting

4-1. Troubleshooting

4-1-1. Previous check

1. Check the various cable connections first.
   - Check to see if there is a burnt or damaged cable.
   - Check to see if there is a disconnected or loose cable connection.
   - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.



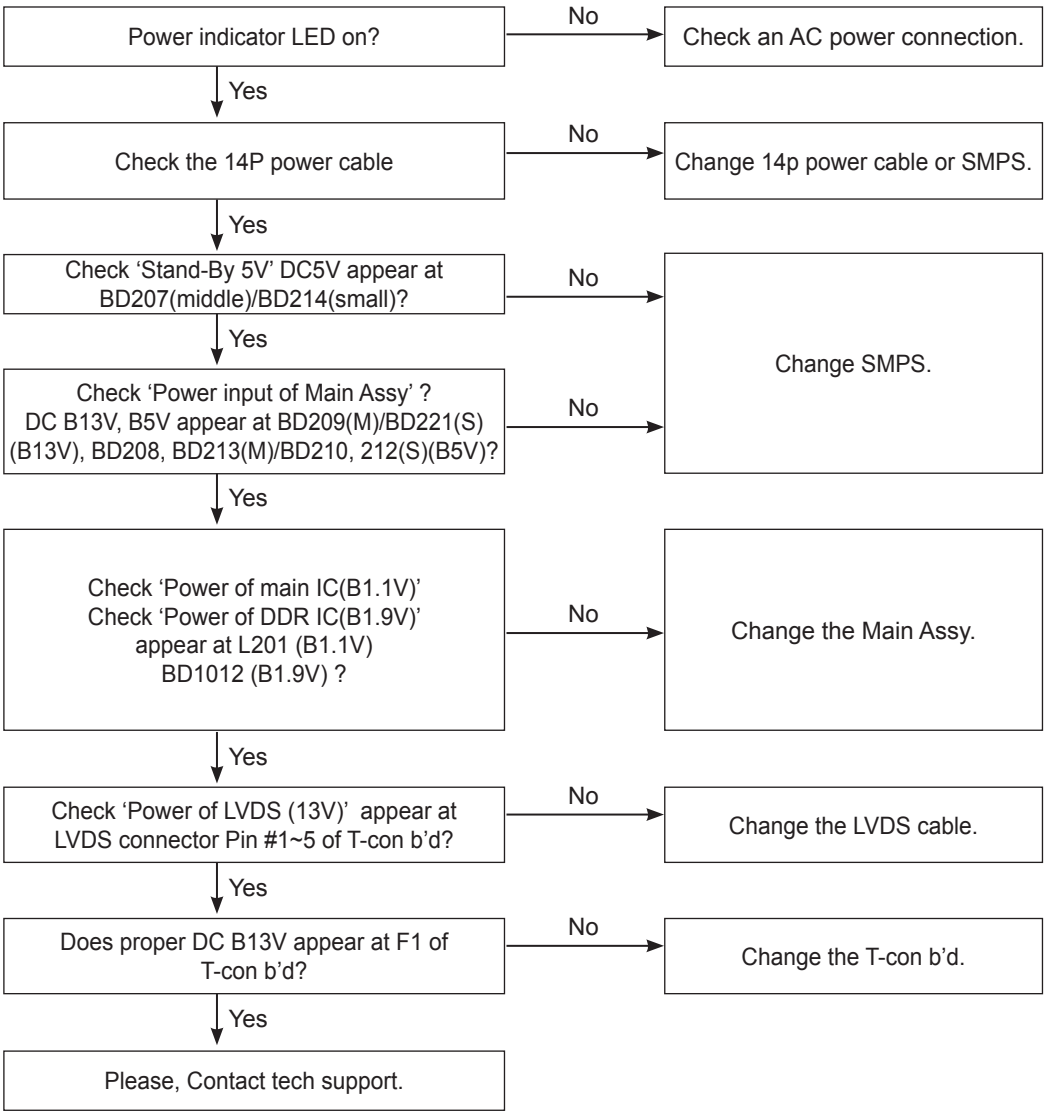


Main Assy (CN202 / 204)				Power Assy (CMN801)			
1	B5V	2	SW_PW	1	B5V	2	SW_PW
3	B5V	4	A5V	3	B5V	4	A5V
5	GND	6	GND	5	GND	6	GND
7	B12VS	8	GND	7	B12VS	8	GND
9	B12VS	10	SW_INV	9	B12VS	10	SW_INV
11	B13V	12	NC	11	B13V	12	NC
13	B13V	14	DMM	13	B13V	14	DMM

Main Assy (CN201 / 203)				Power Assy (CMN801)			
1	B5V	2	SW_PW	1	B5V	2	SW_PW
3	B5V	4	A5V	3	B5V	4	A5V
5	GND	6	GND	5	GND	6	GND
7	B12VS	8	GND	7	B12VS	8	GND
9	B12VS	10	SW_INV	9	B12VS	10	SW_INV
11	B13V	12	NC	11	B13V	12	NC
13	B13V	14	DMM	13	B13V	14	DMM

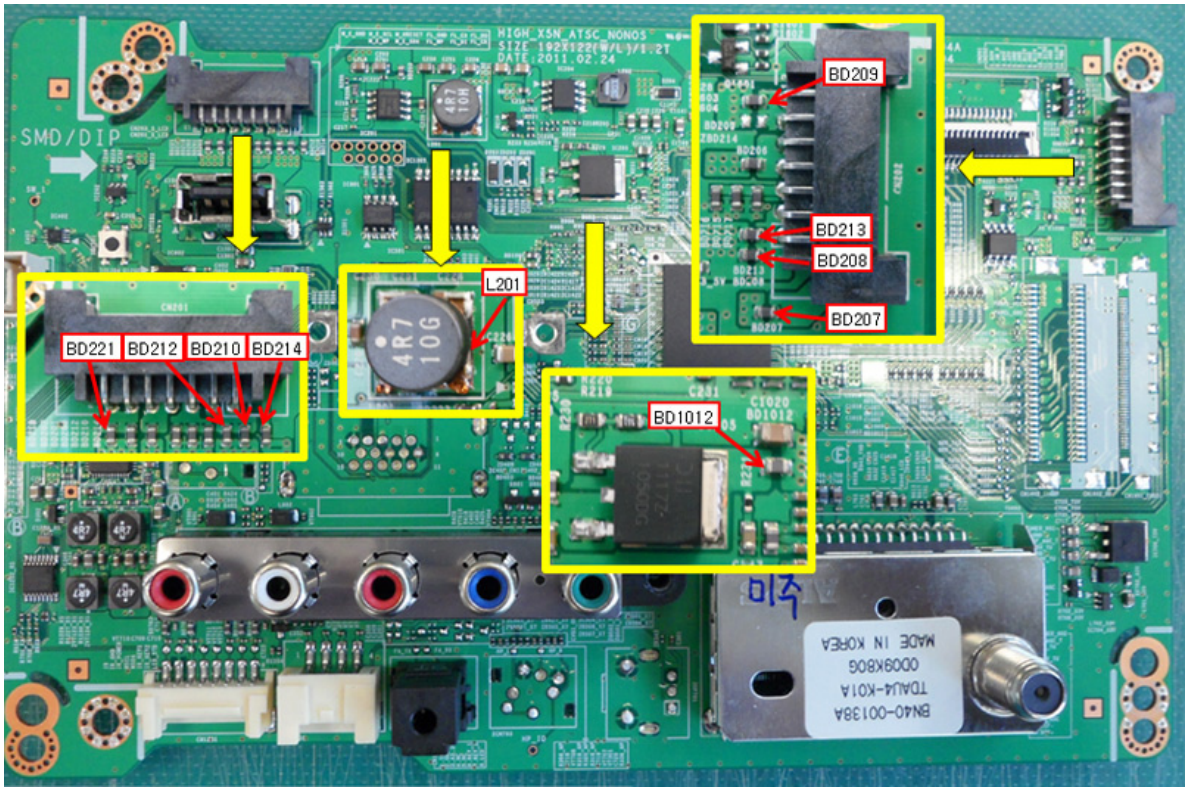
4-1-2. How to check fault symptom

■ No Power

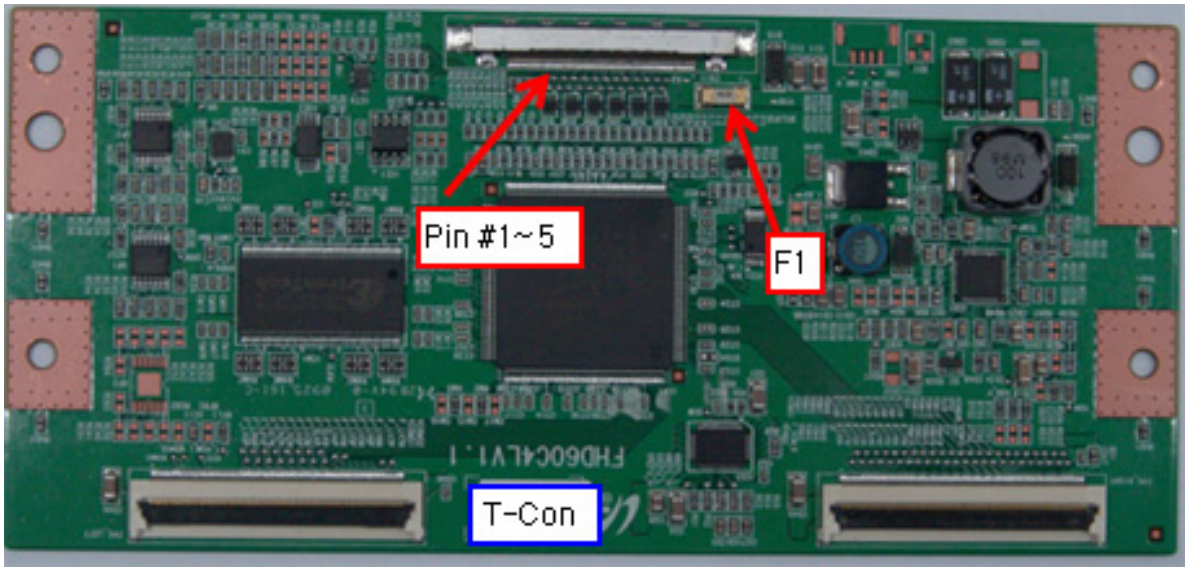
Symptom	– The LEDs on the front panel do not work when connecting the power cord. – The SMPS relay does not work when connecting the power cord. – The units appears to be dead.
Major checkpoints	The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following: – Check the internal cable connection status inside the unit. – Check the fuses of each part. – Check the output voltage of SMPS. – Replace the Main Board.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

Power indicator LED on?
No
Check an AC power connection.
Yes
Check the 14P power cable
No
Change 14p power cable or SMPS.
Yes
Check 'Stand-By 5V' DC5V appear at BD207(middle)/BD214(small)?
No
Change SMPS.
Yes
Check 'Power input of Main Assy' ? DC B13V, B5V appear at BD209(M)/BD221(S) (B13V), BD208, BD213(M)/BD210, 212(S)(B5V)?
No
Yes
Check 'Power of main IC(B1.1V)' Check 'Power of DDR IC(B1.9V)' appear at L201 (B1.1V) BD1012 (B1.9V) ?
No
Change the Main Assy.
Yes
Check 'Power of LVDS (13V)' appear at LVDS connector Pin #1~5 of T-con b'd?
No
Change the LVDS cable.
Yes
Does proper DC B13V appear at F1 of T-con b'd?
No
Change the T-con b'd.
Yes
Please, Contact tech support.

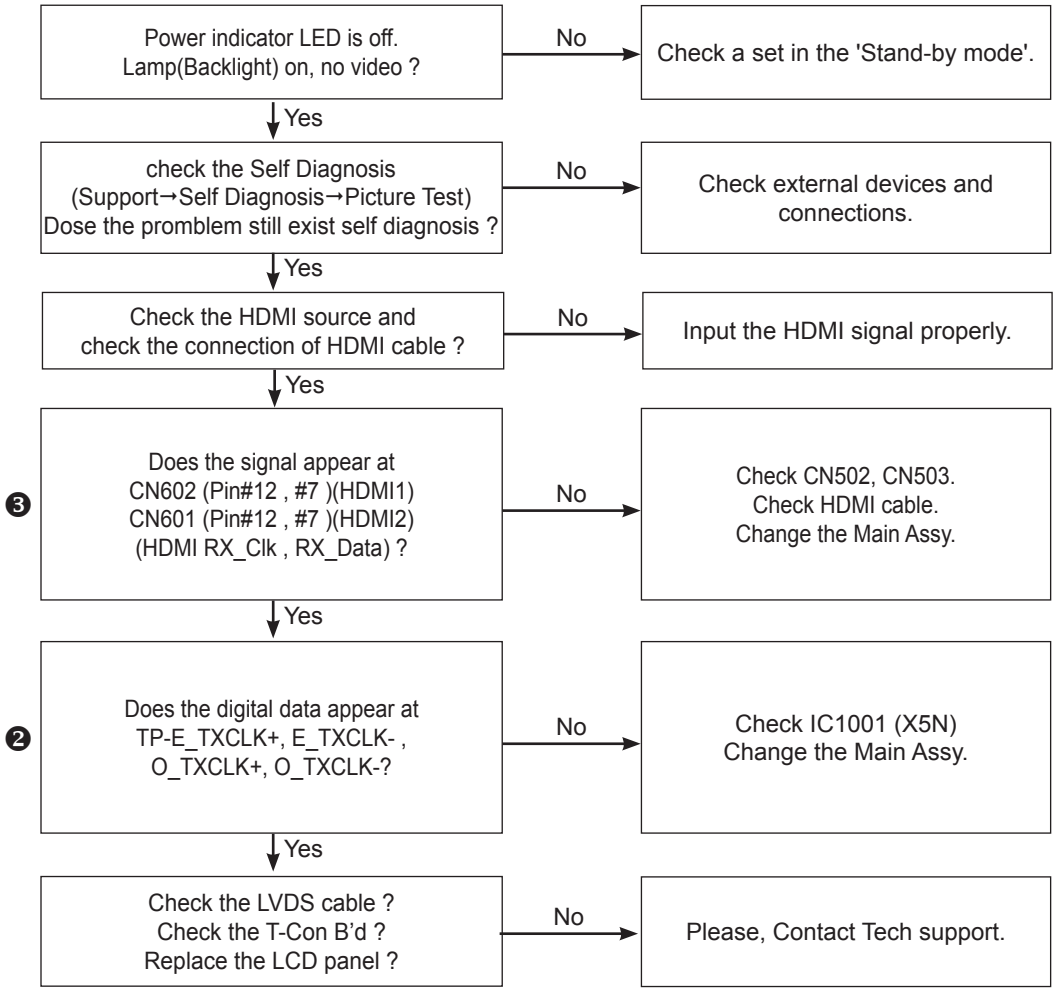
Location (Main) - TOP



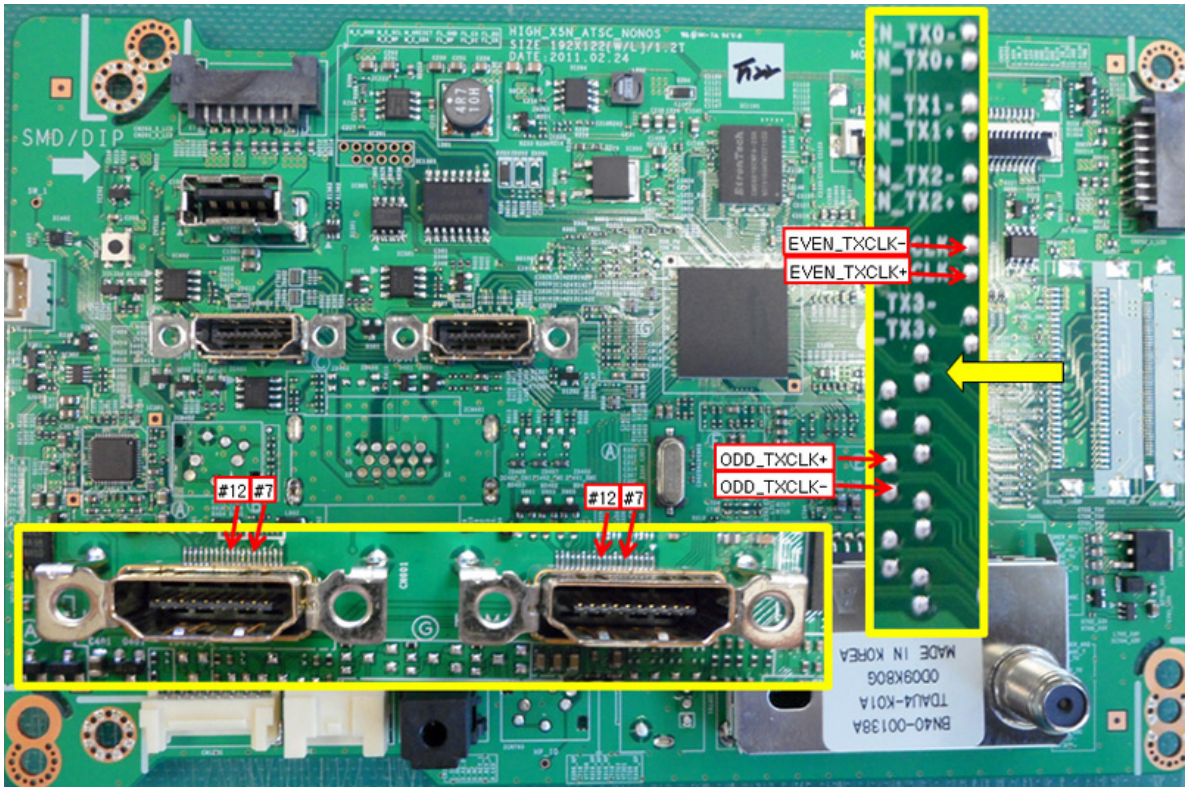
Location (Main) - T-CON



■ No video_HDMI1, 2 - Digital signal

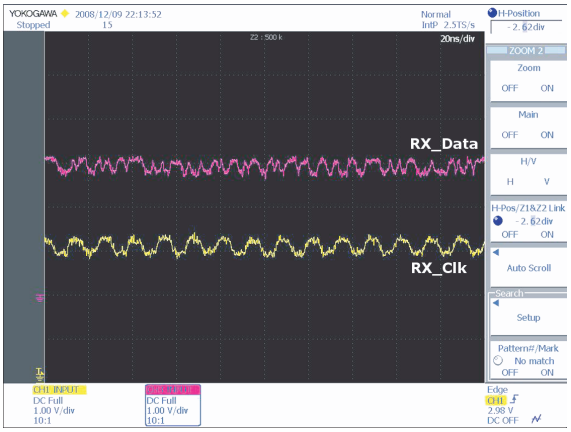
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	– Check the HDMI source. – Check the HDMI switch, Check the Chelsea. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main) - TOP

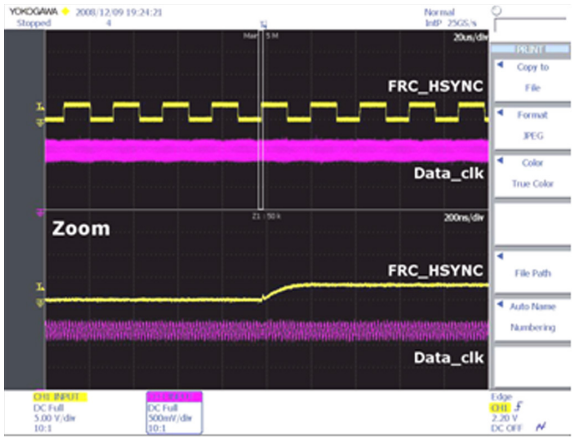


■ WAVEFORMS

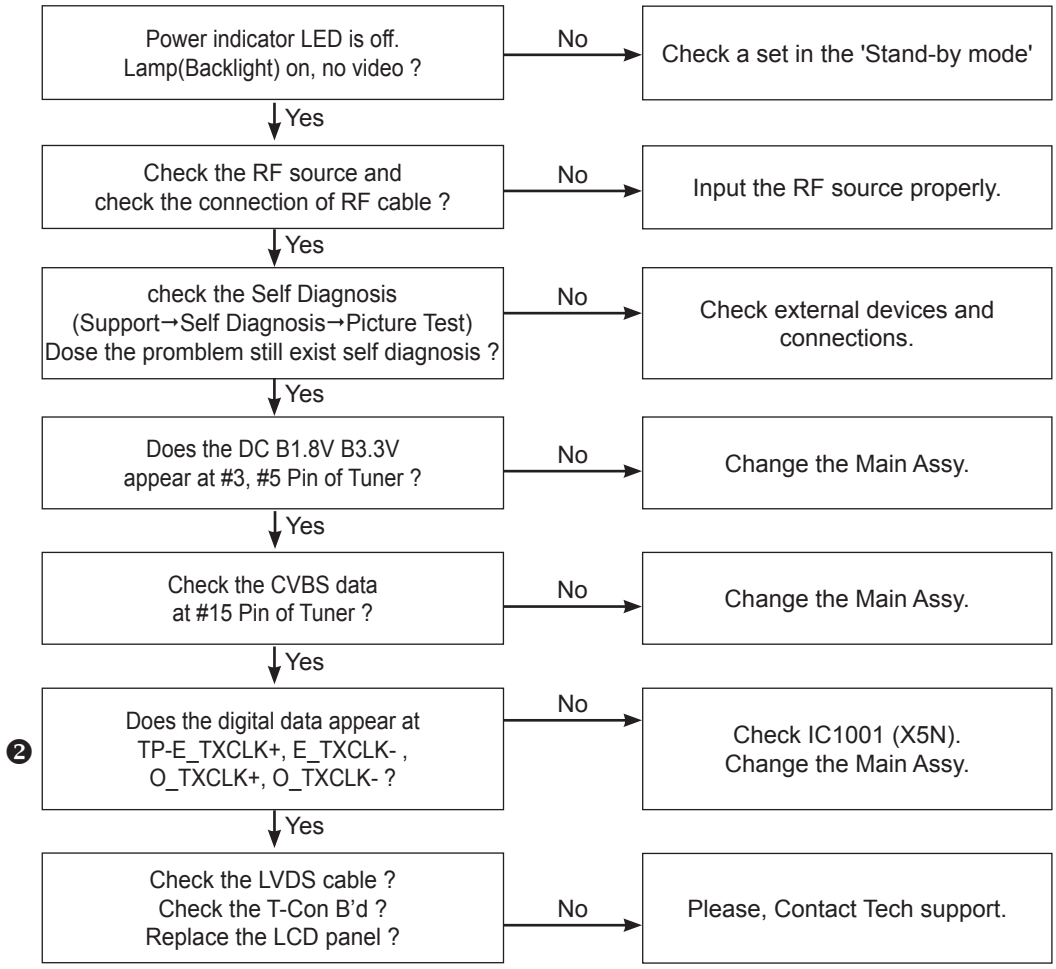
❸	**HDMI input (RX_Data, RX_Clk)**



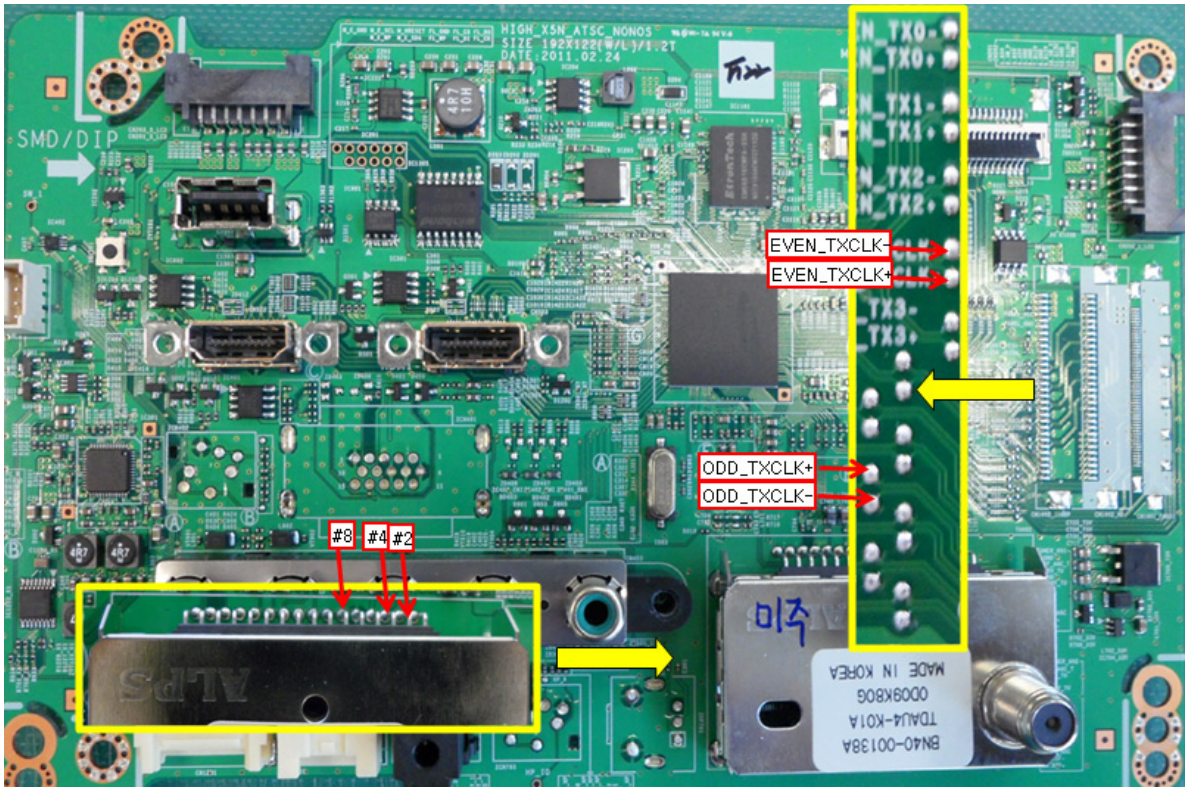
❷	**LVDS output**



■ No Video_Tuner - CVBS

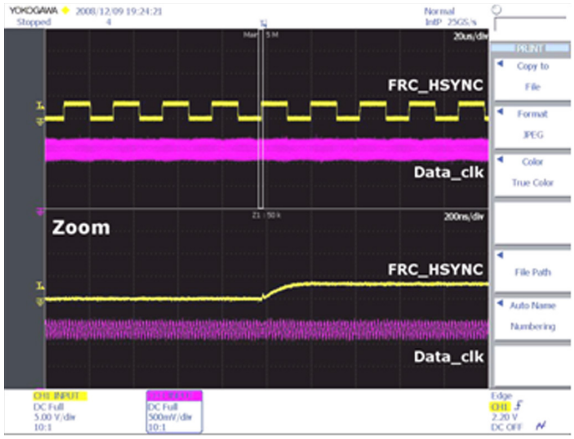
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	– Check the Tuner CVBS source. – Check the Tuner, Check the Chelsea. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main) - TOP

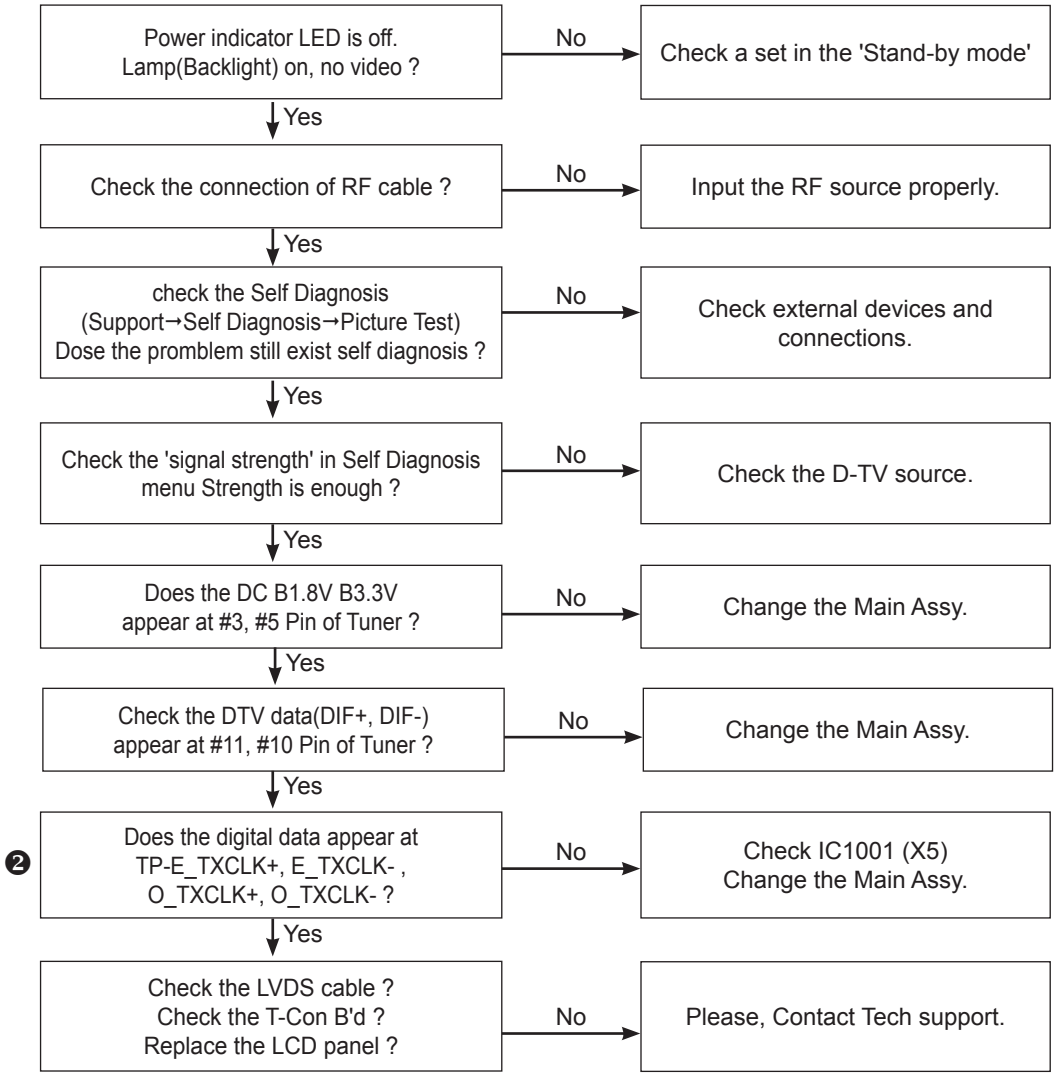


■ WAVEFORMS

❷	**LVDS output**

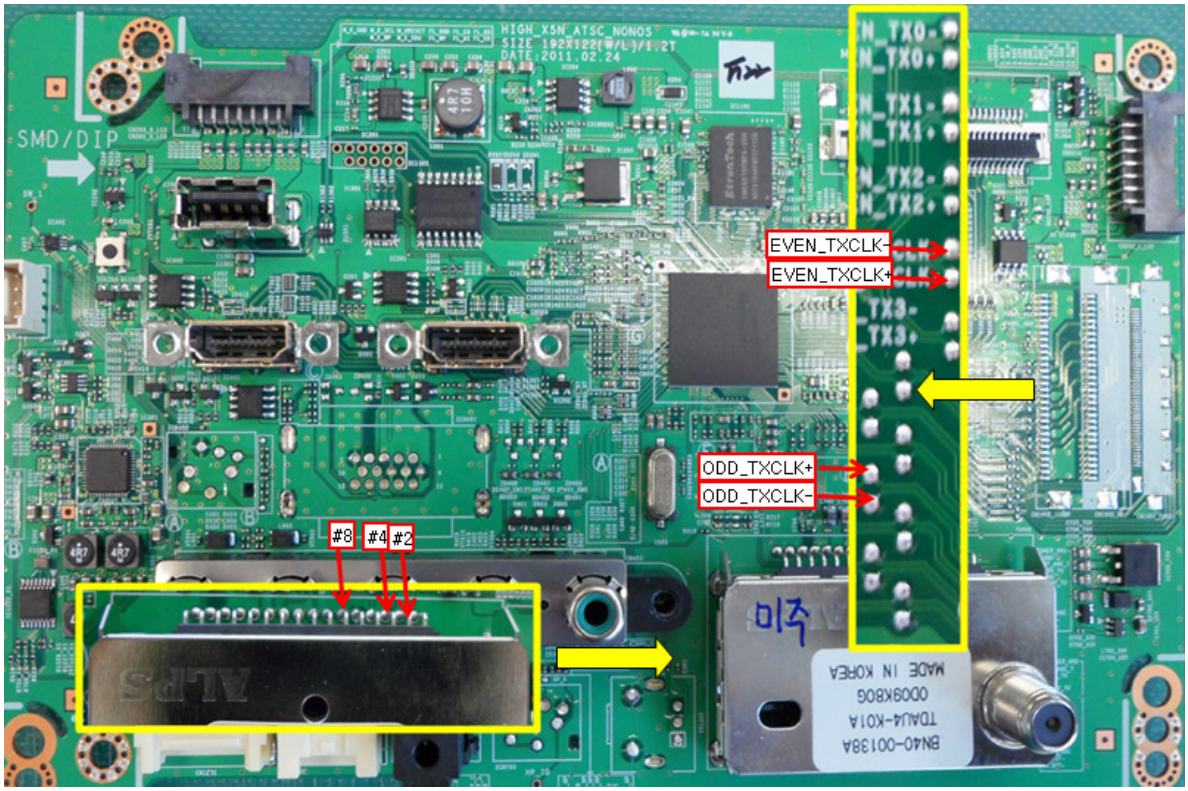


■ No Video_Tuner DTV

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	– Check the DTV source. – Check the Tuner, Check the Chelsea. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

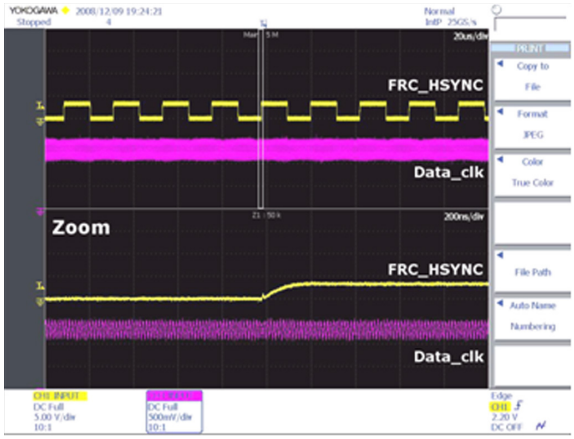
Power indicator LED is off.
Lamp(Backlight) on, no video ?
No
Check a set in the 'Stand-by mode'
Yes
Check the connection of RF cable ?
No
Input the RF source properly.
Yes
check the Self Diagnosis
(Support→Self Diagnosis→Picture Test)
Dose the promblem still exist self diagnosis ?
No
Check external devices and connections.
Yes
Check the 'signal strength' in Self Diagnosis menu Strength is enough ?
No
Check the D-TV source.
Yes
Does the DC B1.8V B3.3V appear at #3, #5 Pin of Tuner ?
No
Change the Main Assy.
Yes
Check the DTV data(DIF+, DIF-) appear at #11, #10 Pin of Tuner ?
No
Change the Main Assy.
Yes
❷
Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK- ?
No
Check IC1001 (X5)
Change the Main Assy.
Yes
Check the LVDS cable ?
Check the T-Con B'd ?
Replace the LCD panel ?
No
Please, Contact Tech support.

Location (Main) - TOP

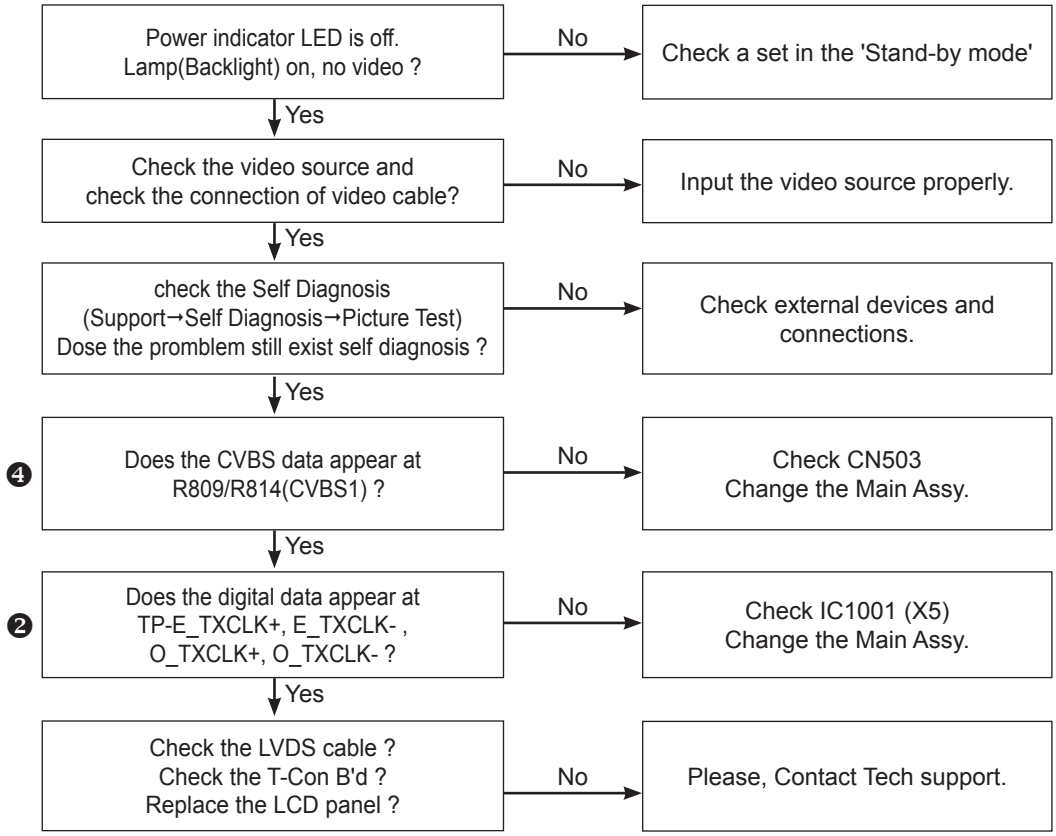


■ WAVEFORMS

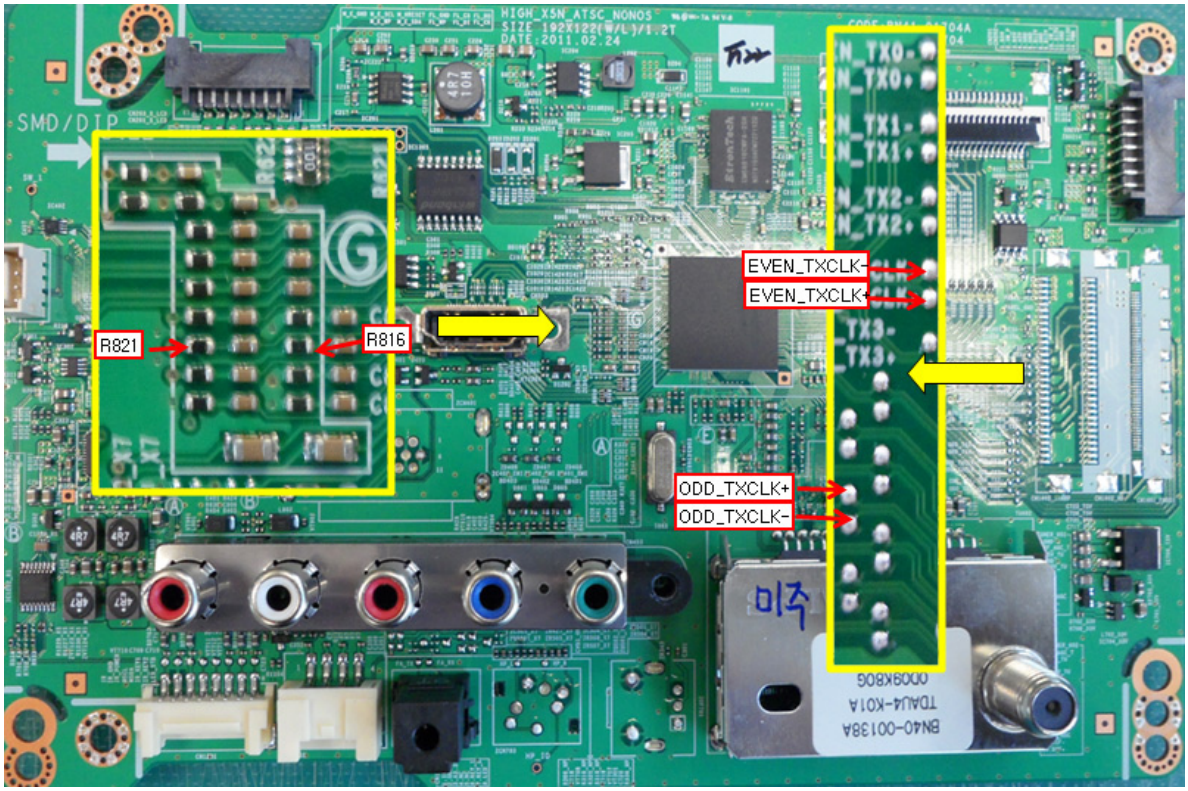
❷	**LVDS output**



■ No Video_Video CVBS

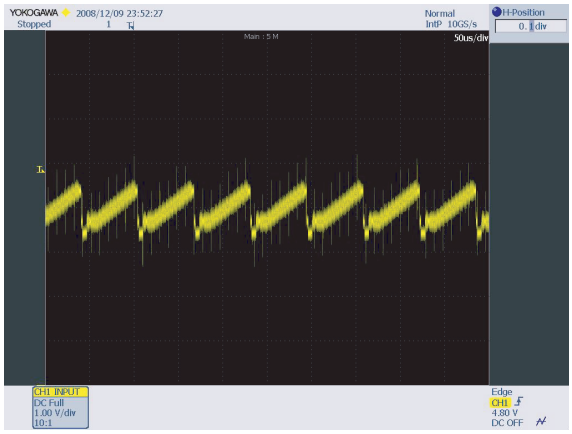
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	– Check the Video CVBS source – Check the Chelsea. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main) - TOP

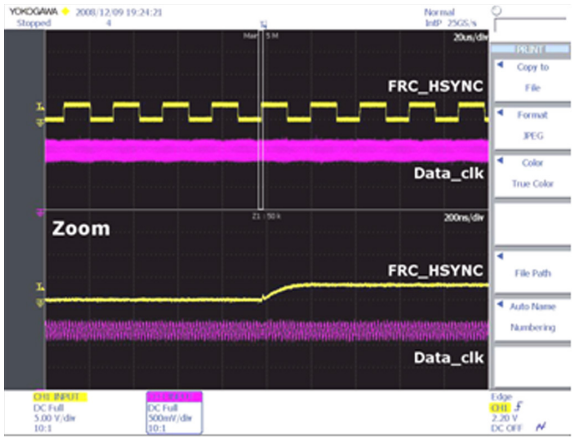


■ WAVEFORMS

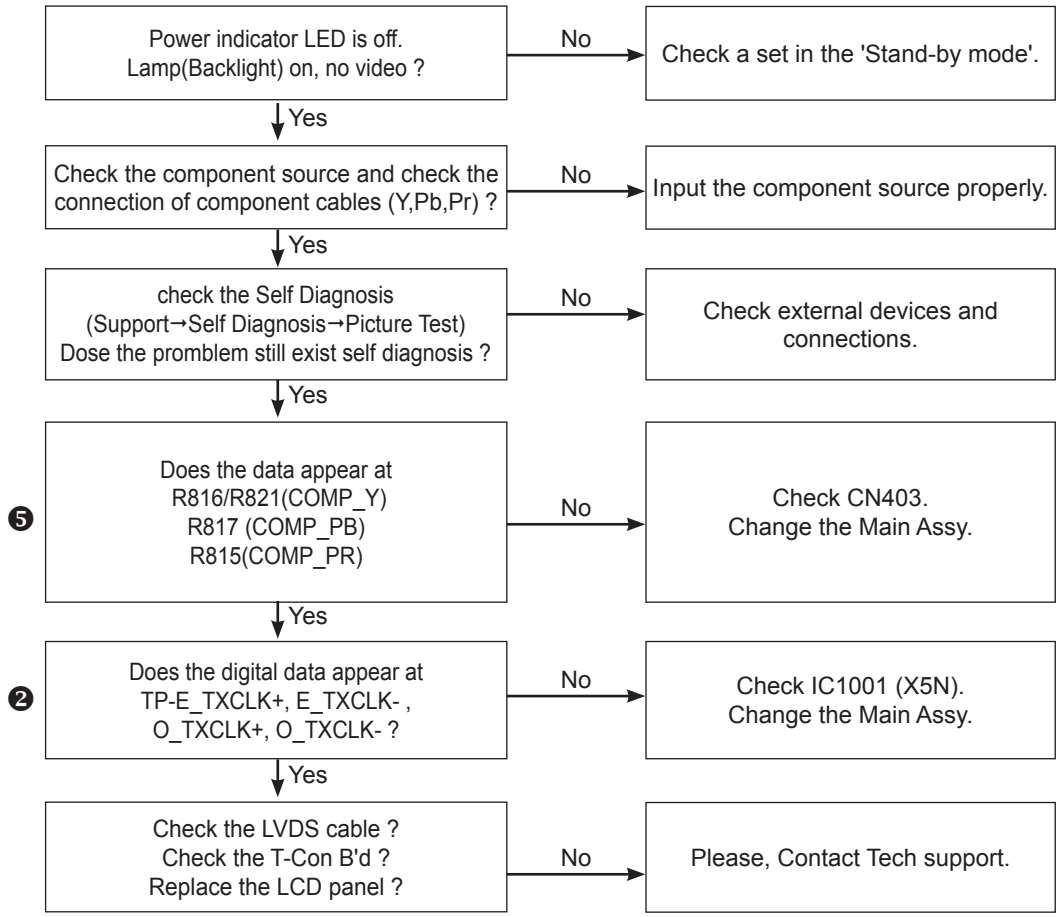
❹ CVBS OUT (Grey Bar)



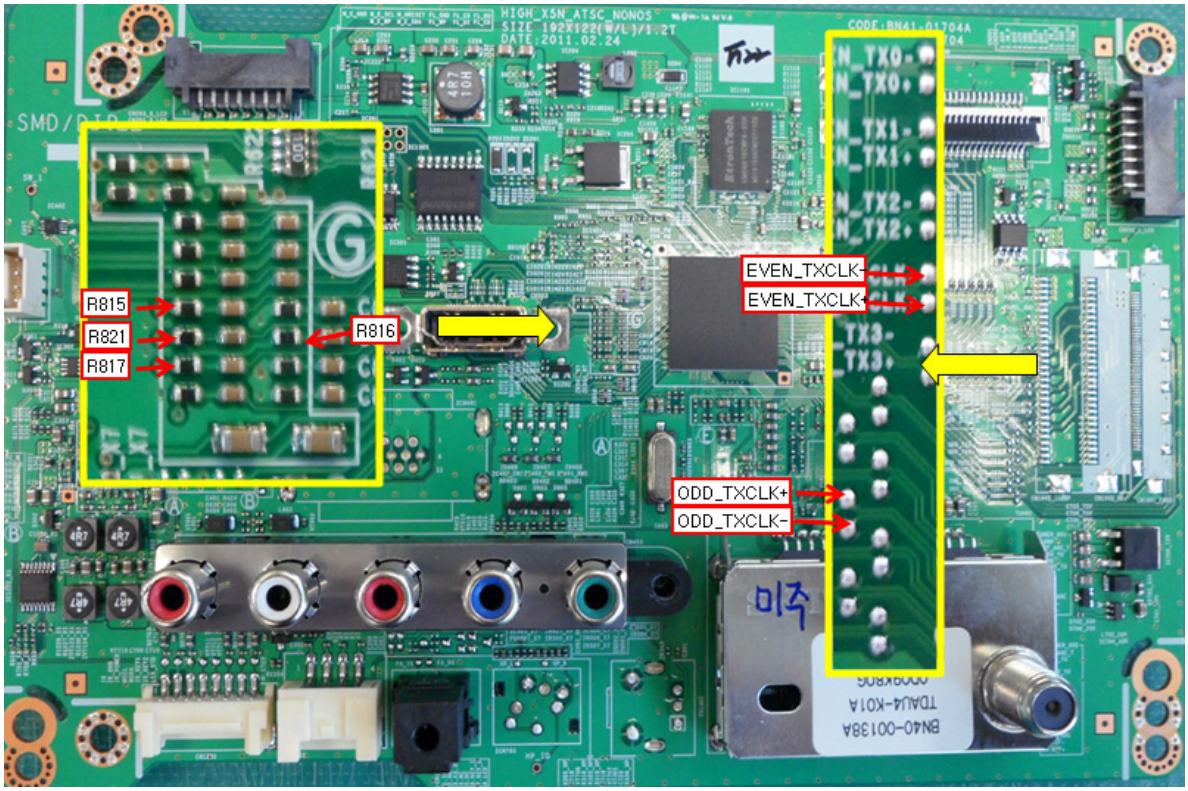
❷ LVDS output



■ No Video_Component

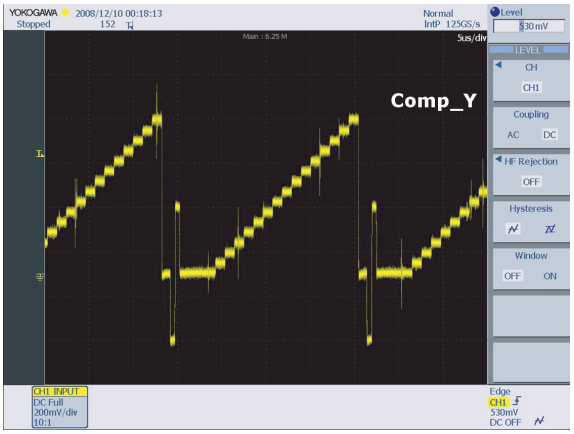
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	– Check the Component source – Check the chelsea. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

Location (Main) - TOP

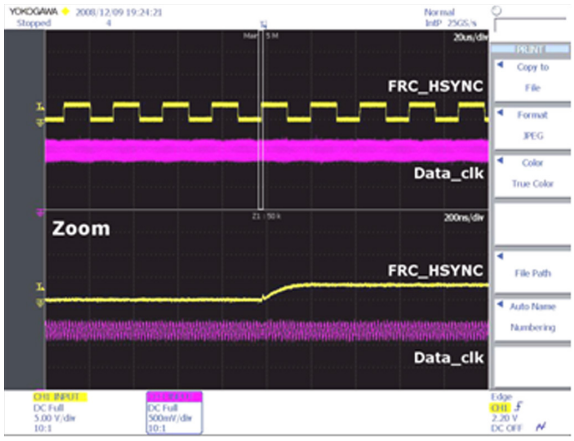


■ WAVEFORMS

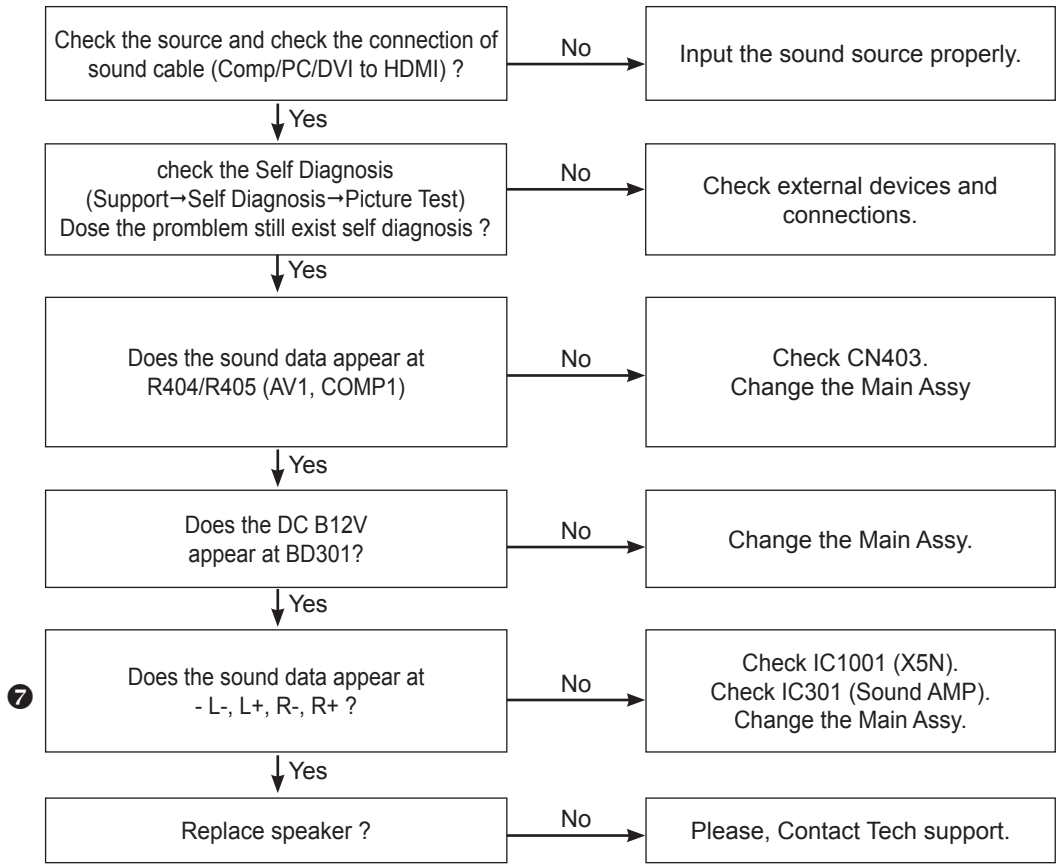
❺	**Compnent_Y (Gray scale) / Pb / Pr (Color bar)**



❷	**LVDS output**

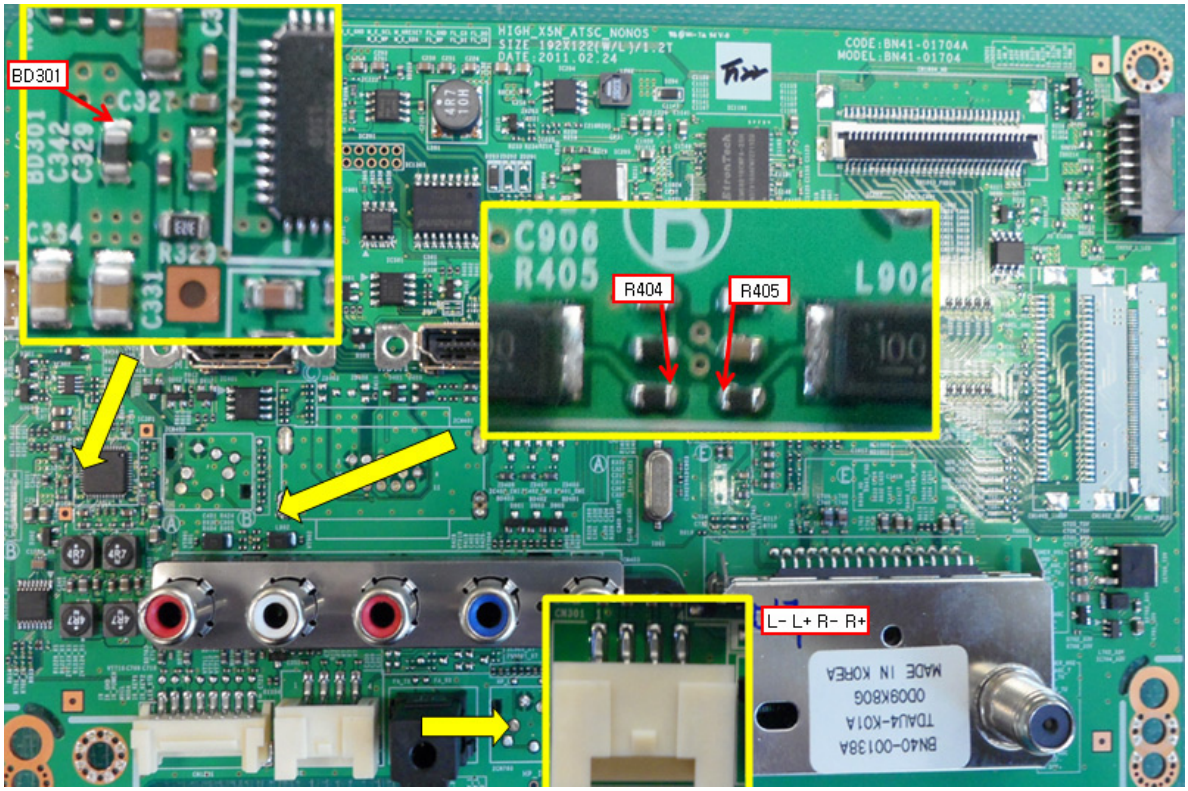


■ No Sound

Symptom	– Video is normal but there is no sound..
Major checkpoints	– When the speaker connectors are disconnected or damaged. – When the sound processing part of the Main Board is not functioning. – Speaker defect..
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

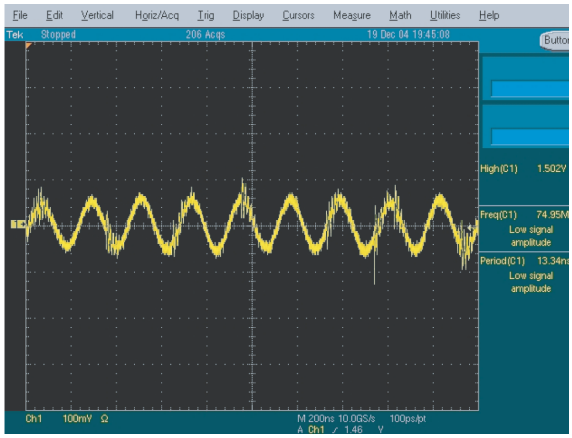
Check the source and check the connection of sound cable (Comp/PC/DVI to HDMI) ?
No
Input the sound source properly.
Yes
check the Self Diagnosis (Support→Self Diagnosis→Picture Test) Dose the promblem still exist self diagnosis ?
No
Check external devices and connections.
Yes
Does the sound data appear at R404/R405 (AV1, COMP1)
No
Check CN403. Change the Main Assy
Yes
Does the DC B12V appear at BD301?
No
Change the Main Assy.
Yes
❼
Does the sound data appear at - L-, L+, R-, R+ ?
No
Check IC1001 (X5N). Check IC301 (Sound AMP). Change the Main Assy.
Yes
Replace speaker ?
No
Please, Contact Tech support.

Location (Main) - TOP



■ WAVEFORMS

❼	**Speaker out**


File Edit Vertical Horiz/Acq Trig Display Cursors Measure Math Utilities Help
Tek Stopped 206 Acqs 19 Dec 04 19:45:08
High(C1) 1.502V
Freq(C1) 74.95M
Low signal amplitude
Period(C1) 13.34ns
Low signal amplitude
Ch1 100mV Ω
M 200ns 10.0GS/s 100ps/pt
A Ch1 ⟋ 1.46 V

4-2. Factory Mode Adjustments

4-2-1 Entering Factory Mode

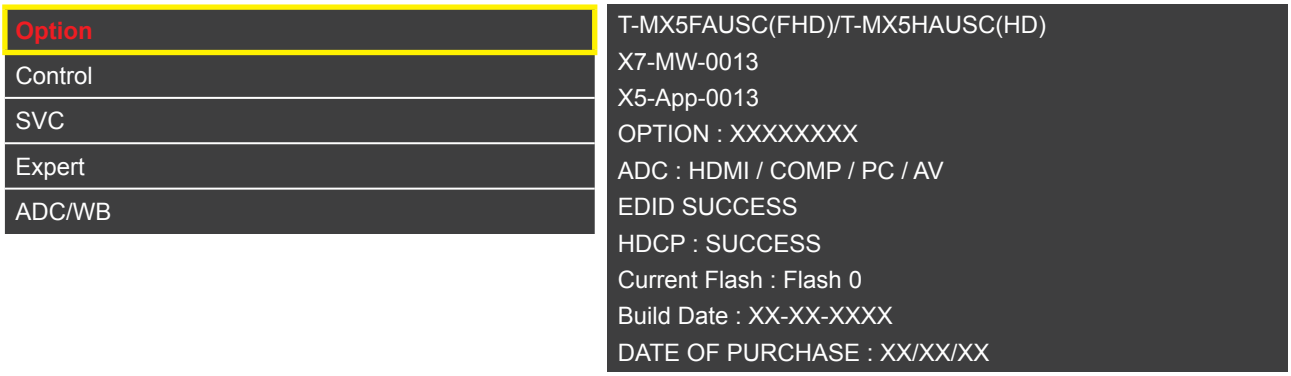
• If you do not have Factory remote - control

Power OFF → MUTE → 1 → 8 → 2 → Power ON

• If you do not have Factory remote - control

INFO → Factory

If you don’t have Factory remote control, can’t control some menu.



4-2-2. Factory Data

Option			
Factory Menu Name	***Data***	***Range***	***Remark***
Factory Reset	-		
Type			
Model	UD5003 UD4003 LD503 LD403	UD5003/UD4003/LD503/LD403	
TUNER	ALPS	ALPS/Xugang/SECCustom	
Audio Amp	TAS5715	TAS5715/NTP3200	
Front Color	NONE		
Local Set	Other	Other/S,America	
Exhibition Mode	Off	On	

Control			
Factory Menu Name	***Data***	***Range***	
EDID			
EDID ON/OFF	Off	On/Off	
EDID WRITE ALL		Success/Failure	
EDID WRITE PC		Success/Failure	
EDID WRITE DVI		Success/Failure	
EDID WRITE HDMI1		Success/Failure	
EDID WRITE HDMI2		Success/Failure	
EDID WRITE HDMI3		Success/Failure	
EDID WRITE HDMI4		HDMI 1.3/HDMI1/2	
EDID VERSION			
Sub Option			
Mute Time(VIDEO)	4	0ms~1000ms	
ready	Failure	Debug/Login/UART	
HotPlug	On	ON/OFF	
Hotplugcontrol	On	0~255	
Spread Spectrum			
Spread Spectrum	*On*	*On/Off*	
Period	*60K*	*40K/50K/60K*	
Amplitude	*2*	*0/0.5/1/1.5/2*	
DDR Spread	*2%*	*Off/1%/2%*	
Auto Power	On		
Arab	Off		
NT Conversion	Off		
Mirror	ON(Middle) / OFF(Small)	ON(Middle) / OFF(Small)	

HDMI EQ1	Middle	Low/Middle/High/Strong	
HDMI EQ2	Middle	Low/Middle/High/Strong	
HDMI EQ3	Middle	Low/Middle/High/Strong	
HDMI EQ4	Middle	Low/Middle/High/Strong	
EER Count	2230		
WM Calib			
Panel Enter Key			
Panel Display Time			
Checksum	XXXX		
View Log			
Font Data Viewer			
Dimm Type	EXT	EXT/INT	
Gamma	0.88	0.88/0.90/0.93/0.95/0.98/Off	
Carrier Mute	Off	On/Off	
Anynet+	Off	On/Off	
HPD Polarity			
High Devi	Off	On/Off	
Volume Cureve	NT	NT/EU/EA	
HotPlug Delay	3	0~63	
HP Ident	Low	High/Low	
PC Ident	On	On/Off	
Info Live			
Watchdog	On	On/Off	
LVDS Format	JEIDA / VESA(19D4003.32D403)	JEIDA / VESA	
OSD Resolution	1366*768		
Bus Stop			
OTA Code			
OTA Duration Test			
Alternate Del			
Ignore VCT Version	On	On/Off	
Change OSD Language	KOR	ENG/KOR	
VCR Mode	Off	On/Off	
PDP Option			
Hotel Option			
Shop Option			
Shop Mode	OFF	ON/OFF	
Shop Mode	OFF	ON/OFF	
USB DEMO ON(SEC)			
USB DEMO OFF(SEC)			
Sound			

BD Mode			
A2K Prescale	20	0~40	
BTSC Mono Prescale	20	0~40	
BTSC streo Prescale	20	0~40	
SAP Prescale	20	0~40	
BTSC M2S Threshold	0x80	0xA0~0x9F	
BTSC S2M Threshold	0x70	0xA0~0x9F	
BTSC Pilot NSR On Thr			
BTSC Pilot NSR Off Thr			
BTSC Stereo On Thr			
BTSC Stereo Off Thr			
SAP Amp On Thr			
SAP Amp Off Thr			
SAP NSR On Thr			
SAP NSR Off Thr			
Carrier Mute Amp On Thr			
Carrier Mute Amp Off Thr			
Carrier NSR On Thr			
Carrier NSR Off Thr			
Carrier Mute Thr High	0x39	0x00~0x7F	
Carrier Mute Thr Low	0x26	0x00~0x7F	
MP3 Level	-6dB	-12dB~0dB	
Master Vol	16	0~255	
PWM Modulation	85	0~255	
DRC1 Threshold	0x35	0x00~0x7F	
DRC2 Threshold	0x23	0x00~0x7F	
SPEAKER EQ	On	On/Off	
SC1 Vol	16	0~255	
SC2 Vol	16	0~255	
Audio Delay	20ms	0~150ms	
SUB AMP Master Vol			
SUB AMP PWM Mod			
SUB DRC Thresh			
SUB Speaker EQ			
[Edu] SPK Level	1	0~8	
[Edu] MIC Level	1	0~8	
[Edu] PGA Gain	2dB	0~59dB	
EQ Check Sum	0xFA9C		
Config Option			
Num of AV	1	0~3	
Num of SVIDEO	0	1~3	

Num of Comp	1	1~3	
Num of HDMI	2	0~4	
Num of SCART	0		
DVI Sound	1	0~1	
HeadPhone	0	0~1	
Num of USB Port			
LNA SUPPORT	On	On/Off	
MFT Offset			
Test Pattern			
Master Test Pattern	Off	Off/1~13	
FBE Test Pattern			
LOGIC Test Pattern	Off	Off/1~31	

Advanced

Factory Menu Name	***Data***	***Range***	***Remark***
PBE			
WM Movie			
Mode	Off	On/Off	
Color Mode	Movie		
Color Tone	Cool		
Msub Brigh	128		
Msub Contr	128		
W1_RGAIN	138		
W1_BGAIN	104		
W1_ROFFS	130		
W1_BOFFS	127		
W2_RGAIN	131		
W2_BGAIN	64		
W2_ROFFS	133		
W2_BOFFS	129		
W3_RGAIN	128		
W3_BGAIN	128		
W3_ROFFS	128		
W3_BOFFS	128		
N_RGAIN	131		
N_BGAIN	122		
N_ROFFS	128		
N_BOFFS	129		
Movie Countr	100		
Movie Brigh	45		
Movie Color	55		

Movie Sharp	55		
Movie Tint	50		
Movie BkLight	10		
M.Gamma	Off		
M_Sub Gamma	0		
EPA Standard			
Std Contr	100	0~100	
Std Bright	45	0~100	
Std Sharp	50	0~100	
Std Color	50	0~100	
Std Tint	50	0~100	
Std Backight	8	0~10	
ADJUST			
Dynamic Dimming			
LNA Plus			
RF dB1 Level	*4*	*0~255*	
RF dB2 Level	*6*	*0~255*	
RF dB3 Level	*10*	*0~255*	
RF dB4 Level	*20*	*0~255*	
LNA Plus			
Power Key Protect	Off	On/Off	
UART Select	Auto Wall	Auto Wall/Debug/MDC/On1/On2	
Debug Mode	Debug Off	Debug Off/Debug Smart/Debug RunTime	
Back End Mute			
PDP FRC			
VisualTEST Plus	Disable		
Standby Mode Time	45 Min	2 Min/45 Min	
Delete alt.ver	2 Flash		
OTA confirm Time	90 Min	3 Min/90 Min	
OTA limit Time	3 Hour	3 Min/3Hour	
Dynamic CE	Off	On/Off	
FWC	Off	On/Off	
1080p 48Hz	On	On/Off	
PWM Max	100	1~100	
Quick Start			
DTV LNA	Auto	On/Off	
HDCP Download	Off	On/Off	
USB Download	Off	On/Off	
YC_Delay			
PAL BG	1	0~3	
PAL DK	1	0~3	

PAL I	1	0~3	
SECAM BG	4	0~3	
SECAM DK	4	0~3	
SECAML	4	0~3	
NTSC 358	1	0~3	
NTSC 443	0	0~3	
AV PAL	1	0~3	
AV SECAM	4	0~3	
AV NT358	1	0~3	
AV NT443	1	0~3	
AV PAL60	1	0~3	
SHARPNESS			
H1 GAIN	0X12	0X00~0XFF	
H2 GAIN	0X08	0X00~0XFF	
H3 GAIN	0X08	0X00~0XFF	
H4 GAIN	0X08	0X00~0XFF	
V1 GAIN	0X10	0X00~0XFF	
V2 GAIN	0X0E	0X00~0XFF	
H OVERSHOOT	0X20	0X00~0XFF	
V OVERSHOOT	0X20	0X00~0XFF	
H UNDERSHOOT	0X20	0X00~0XFF	
V UNDERSHOOT	0X20	0X00~0XFF	
CORING TH2	0X01	0X01~0X0F	
CORING TH1	0X01	0X01~0X0F	
PE			
SKIN_X	0X00	0X00~0XFF	
SKIN_Y	0X01	0X00~0XFF	
B_SLOPE	0X8A	0X00~0XFF	
DLC_ML	0X90	0X00~0XFF	
DLC_MH	0X90	0X00~0XFF	
DLC_H	0XEB	0X00~0XFF	
SKIN_SAT	0X00	0X00~0XFF	
SKIN_HUE	0X20	0X00~0XFF	
M_SKIN_HUE	0X40	0X00~0XFF	
M_SKIN_X	0X00	0X00~0XFF	
M_SKIN_Y	0X00	0X01~0X0F	
MID_COLOR_LEVEL	0XB8	0X01~0X0F	
M_MID_COLOR_LEVE	0X95	0X01~0X0F	
PQ OTHERS			
7.5 IRE NTSC	OFF	ON/OFF	
7.5 IRE OFFSET	16	0~60	

COLOR SPACE			
RED SAT	0X12	0X00~0XFF	
RED HUE	0X40	0X00~0XFF	
GREEN SAT	0X16	0X00~0XFF	
GREEN HUE	0X70	0X00~0XFF	
BLUE SAT	0X1A	0X00~0XFF	
BLUE HUE	0X70	0X00~0XFF	
CYAN SAT	0X16	0X00~0XFF	
CYAN HUE	0X40	0X00~0XFF	
MAGENTA SAT	0X16	0X00~0XFF	
MAGENTA HUE	0X40	0X00~0XFF	
YELLOW SAT	0X0F	0X00~0XFF	
YELLOW HUE	0X70	0X00~0XFF	
FWC BLUE	0X0F	0X00~0XFF	
FWC RED	0X0F	0X00~0XFF	
EEPROM RESET			
EEPROM RESET	OFF	ON/OFF	
NVR ALL CLEAR	OFF	ON/OFF	

EXPERT			
Factory Menu Name	***Data***	***Range***	***Remark***
N/D ADJ	OFF	ON/OFF	
SOURCE	CURRENT		

SVC			
Factory Menu Name	***Data***	***Range***	***Remark***
MODE	**DYNAMIC**	**DYNAMIC/MOVIE**	
SCC ON/OFF	OFF	ON/OFF	
SCC INPUT DATA			
HX	*272*	*0~1024*	
HY	*278*	*0~1024*	
LX	*272*	*0~1024*	
LY	*278*	*0~1024*	
SSCC CONST			
SSCC HX	*554*	*0~1024*	
SSCC HY	*573*	*0~1024*	
SSCC LX	*550*	*0~1024*	
SSCC LY	*576*	*0~1024*	
PSCC CONST	…		
PSCC HX	*554*	*0~1024*	
PSCC HY	*573*	*0~1024*	
PSCC LX	*550*	*0~1024*	

PSCC LY	*576*	*0~1024*	
SCC SOURCE DATA	PBA	PBA/PANEL	
SWAP	PBA	PBA/PANEL	
PANEL AUTO SETTING			
1st_AV_Low	64	0 ~ 1020	
1st_AV_High	880	0 ~ 1020	
1st_AV_Delta	2	0 ~ 7	
1st_COMP_Y_Low	64	0 ~ 1020	
1st_COMP_Cb_Low	…		
1st_COMP_Cr_Low	…		
1st_COMP_Y_High	940	0 ~ 1020	
1st_COMP_Cb_High	…		
1st_COMP_Cr_High	…		
1st_COMP_Delta	2	0~7	
1st_PC_R_Low	16	0 ~ 1020	
1st_PC_G_Low	…		
1st_PC_B_Low	…		
1st_PC_R_High	1004	0 ~ 1020	
1st_PC_G_Low	…		
1st_PC_B_Low	…		
1st_PC_Delta	2	0~7	
2nd_AV_R_Low	4	fixed	
2nd_AV_G_Low	4	fixed	
2nd_AV_B_Low	4	fixed	
2nd_AV_R_High	940	fixed	
2nd_AV_G_High	940	fixed	
2nd_AV_B_High	940	fixed	
2nd_AV_Delta	2	0~7	
2nd_COMP_R_Low	4	fixed	
2nd_COMP_G_Low	4	fixed	
2nd_COMP_B_Low	4	fixed	
2nd_COMP_R_High	940	fixed	
2nd_COMP_G_High	940	fixed	
2nd_COMP_B_High	940	fixed	
2nd_COMP_Delta	2	0~7	
2nd_PC_R_Low	4	fixed	
2nd_PC_G_Low	4	fixed	
2nd_PC_B_Low	4	fixed	
2nd_PC_R_High	940	fixed	
2nd_PC_G_High	940	fixed	
2nd_PC_B_High	940	fixed	

2nd_PC_Delta	2	0~7	
2nd_HDMI_R_Low	4	fixed	
2nd_HDMI_G_Low	4	fixed	
2nd_HDMI_B_Low	4	fixed	
2nd_HDMI_R_High	940	fixed	
2nd_HDMI_G_High	940	fixed	
2nd_HDMI_B_High	940	fixed	
2nd_HDMI_Delta	2	0~7	
ADC Result			
1st_Y_GH	0	fixed	
1st_Y_GL	0	fixed	
1st_Cb_BH	0	fixed	
1st_Cb_BL	0	fixed	
1st_Cr_RH	0	fixed	
1st_Cr_RL	0	fixed	
2nd_R_L	134	0 ~ 255	
2nd_G_L	134	0 ~ 255	
2nd_B_L	134	0 ~ 255	
2nd_R_H	49	0 ~ 255	
2nd_G_H	49	0 ~ 255	
2nd_B_H	49	0 ~ 255	
WB			
Sub Brightness	128	0 ~ 1023	
R_Offset	512	0 ~ 1023	
G_Offset	512	0 ~ 1023	
B_Offset	512	0 ~ 1023	
Sub Contrast	128	0 ~ 1023	
R_Gain	512	0 ~ 1023	
G_Gain	512	0 ~ 1023	
B_Gain	512	0 ~ 1023	
Movie R Offset	…	fixed	
Movie B Offset	…	fixed	
Movie R Gain	…	fixed	
Movie B Gain	…	fixed	

4-3. White Balance - Calibration

4-3-1. White Balance -Calibration

Factory

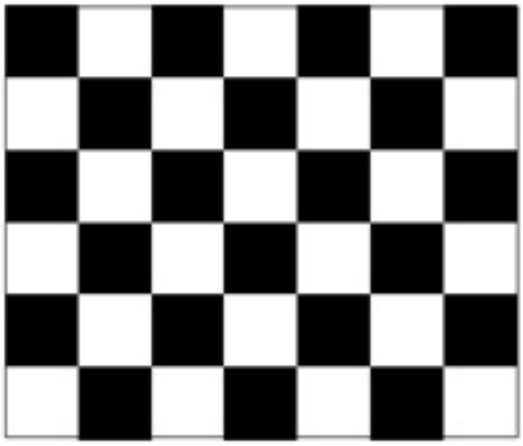
ADC / WB → AV Calibration
Comp Calibration
PC Calibration
HDMI Calibration

4-3-2. Service Adjustment

You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration
Adjust spec.

1. Source : HDMI
2. Setting Mode : 1280*720@60Hz
3. Pattern : Pattern #24 (Chess Pattern)



4. Use Equipment : CA210 & Master MSPG925 Generator
Use other equipment only after comparing The result with that of The Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

■ Method of Color Calibration (AV)

1) Apply the NTSC Lattice (N0. 3) pattern signal to the AV IN 1 port.
2) Press the Source key to switch to “AV1” mode.
3) Enter Service mode.
4) Select the “ADC” menu.
5) Select the “AV Calibration” menu.
6) In “AV Calibration Off” status, press the “ ” key to perform Calibration.
7) When Calibration is complete, it returns to the high-level menu.
8) You can see the change of the “AV Calibration” status from Failure to Success.

■ Method of Color Calibration (Component)

1) Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port.
2) Press the Source key to switch to “Component1” mode.
3) Enter Service mode.
4) Select the “ADC” menu.
5) Select the “Comp Calibration” menu.
6) In “Comp Calibration Off” status, press the “ ” key to perform Calibration.
7) When Calibration is complete, it returns to the high-level menu.
8) You can see the change of the “Comp Calibration” status from Failure to Success.

■ Method of Color Calibration (PC)

1) Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2) Press the Source key to switch to “PC” mode.
3) Enter Service mode.
4) Select the “ADC” menu.
5) Select the “PC Calibration” menu.
6) In “PC Calibration Off” status, press the “ ” key to perform Calibration.
7) When Calibration is complete, it returns to the high-level menu.
8) You can see the change of the “PC Calibration” status from Failure to Success.

■ Method of Color Calibration (HDMI)

1) Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port.
2) Press the Source key to switch to “HDMI1” mode.
3) Enter Service mode.
4) Select the “ADC” menu.
5) Select the “HDMI Calibration” menu.
6) In “HDMI Calibration Off” status, press the “ ” key to perform Calibration.
7) When Calibration is complete, it returns to the high-level menu.
8) You can see the change of the “HDMI Calibration” status from Failure to Success.

4-3-3. White Balance - Adjustment

Factory		(Low light)	(High light)
ADC / WB - White Balance	→	Sub Bright R offset G offset B offset	Sub Contrast R gain G gain B gain

4-4. White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).
2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.
3. The optimal values for each mode are configured by default. (Refer to Table 1, 2)
   It varies with Panel's size and Specification.

- Equipment : CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min

- Calibration and Manual setting for WB adjustment.

HDMI : Calibration at #24 Chessboard Pattern → Manual adjustment #92 pattern (720p)
COMP: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (720p)
CVBS: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (NTSC)

- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.
- White Balance Manual Adjustment

• **UN19D4003BD**

P-Mode	Adjustment Coordinate CA-210				
		x	y	Y(Luminance)	T(K)+MPCD
[Dynamic Cool1] HDMI Comp CVBS	H/L	281	288	R-Gain : 132 B-Gain : 154 Sub_CT : 128	10,000 (+/- 0)
	L/L	-	-	(Sub_Brt:128 Fix) R-Offset, B-Offset : 128	-
[Movie Warm2] HDMI Comp CVBS	H/L	-	-	(M-Sub_CT:128 Fix) appiled Movie W2 R/B-gain	-
	L/L	-	-	(M-Sub_Brt:128 Fix) appiled Movie W2 R/B-gain	-

• **UN26D4003BD**

P-Mode	Adjustment Coordinate CA-210				
		x	y	Y(Luminance)	T(K)+MPCD
[Dynamic Cool1] HDMI Comp CVBS	H/L	264	274	30.1 fL (Sub_CT:133 Fix)	12,000 (±0)
	L/L	-	-	1.8 fL (Sub-Brt:128 Fix)	-
[Movie Warm2] HDMI Comp CVBS	H/L	319	340	- fL (M_Sub_CT:128 Fix)	6,500(+-0)
	L/L	-	-	- fL (M_Sub_CT:128 Fix)	-

• **UN32D4003BD**

P-Mode	Adjustment Coordinate CA-210				
		x	y	Y(Luminance)	T(K)+MPCD
[Dynamic Cool1] HDMI Comp CVBS	H/L	264	274	31.8 fL (Sub_CT:136 Fix)	12,000 (±0)
	L/L	-	-	1.8 fL (Sub-Brt:128 Fix)	-
[Movie Warm2] HDMI Comp CVBS	H/L	319	340	- fL (M_Sub_CT:128 Fix)	6,500(+-0)
	L/L	-	-	- fL (M_Sub_CT:128 Fix)	-

• **UN22D5003BF**

P-Mode	Adjustment Coordinate CA-210				
		x	y	Y(Luminance)	T(K)+MPCD
[Dynamic Cool1] HDMI Comp CVBS	H/L	264	274	31.8 fL (Sub_CT:136 Fix)	12,000 (±0)
	L/L	-	-	1.8 fL (Sub-Brt:128 Fix)	-
[Movie Warm2] HDMI Comp CVBS	H/L	319	340	- fL (M_Sub_CT:128 Fix)	6,500(+-0)
	L/L	-	-	- fL (M_Sub_CT:128 Fix)	-

• **LN32D40*E*D**

P-Mode	Adjustment Coordinate CA-210				
		x	y	Y(Luminance)	T(K)+MPCD
[Dynamic Cool1] HDMI Comp CVBS	H/L	272	278	38.0 fL (Sub_CT:134 Fix)	12,000 (±0)
	L/L	272	278	2.2 fL (Sub-Brt:128 Fix)	12,000 (±0)
[Movie Warm2] HDMI Comp CVBS	H/L	306	327	- fL (M_Sub_CT:128 Fix)	6,500 (±0)
	L/L	306	327	- fL (M_Sub_CT:128 Fix)	6,500 (±0)

4-5. Software Upgrade

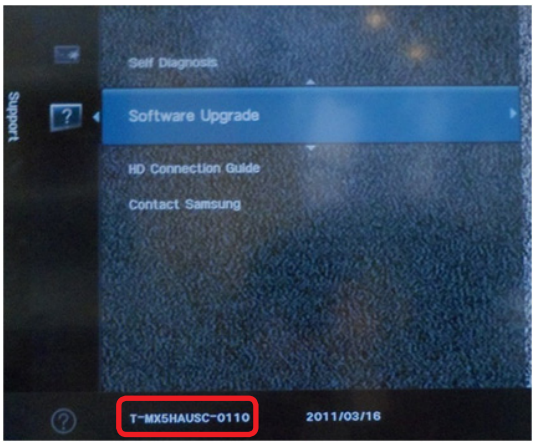
Software Upgrade can be performed by downloading the latest firmware from samsung.com to a USB memory device.
Current Version - the software already installed in the TV.

❖ **Note :** Software is represented as 'Year/Month/Day_Version'.

4-5-1. How to check the SW version

Use the main menu

1. Click the "menu" key in remote controler.
2. Select Support menu.
3. Locate the menu cursor "Software Upgrade" menu.
4. Click the "info" key.
5. Check the Main SW and Micom version.



Use the factory mode

- Access the factory mode

Option
Control
SVC
Expert
ADC/WB
Advanced

T-MX5FAUSC(FHD)/T-MX5HAUSC(HD) : SW Ver,
X7-MW-0013
X5-App-0013
OPTION : XXXXXXXX
ADC : HDMI / COMP / PC / AV
EDID SUCCESS
HDCP : SUCCESS
Current Flash : Flash 0
Build Date : XX-XX-XXXX
DATE OF PURCHASE : XX/XX/XX

4-5-2. How to Upgade SW and Micom

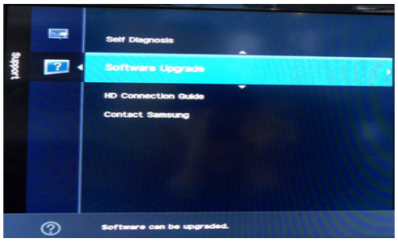
Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV.
Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete (the new version will have a higher number than the older version). When software is upgraded, video and audio settings you have When software is upgraded, video and audio settings you have you write down your settings so that you can easily reset them after the upgrade.

■ Main SW upgrade

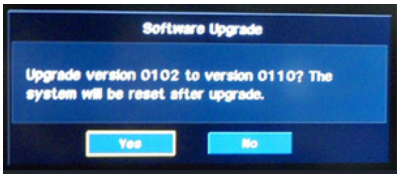
1. Store the sw program named "T-MX5FAUSC"(FHD) or "T-MX5HAUSC"(HD) in USB memory stick.
   - Connect the USB.

2. Click the **MENU** key in remote controler.

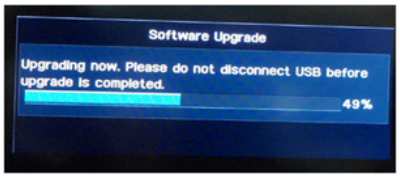
3. Select **Support** menu.
   - Locate the menu cursor **Software Upgrade** menu.



4. Click the **ENTER** key.

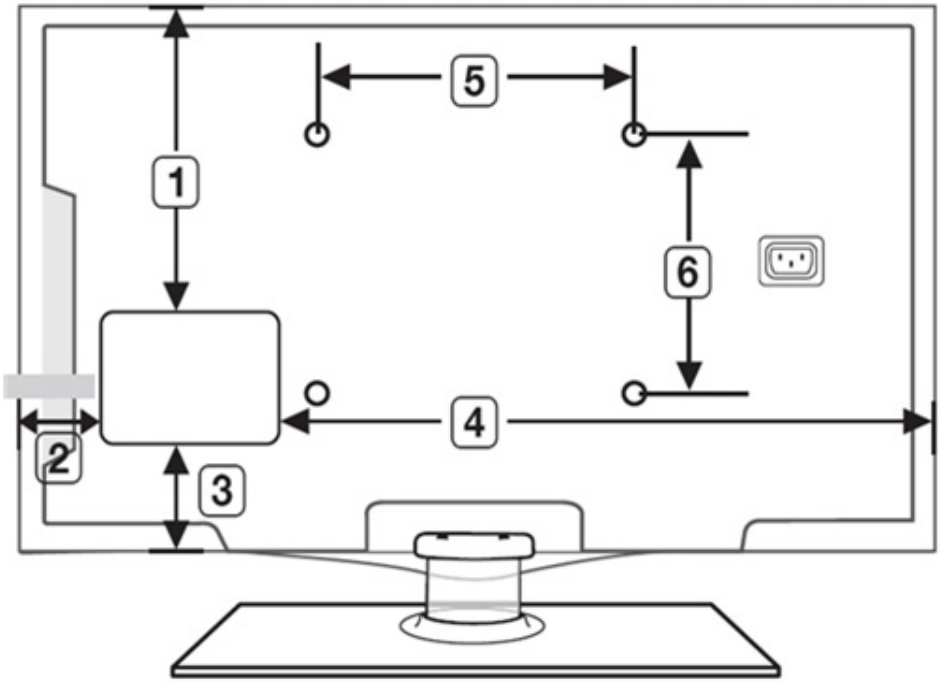


5. Click the **ENTER** key.
   - Wait for upgrade complete and check the SW version.



4-6. Rear Cover Dimension

Cover-Rear Area



	1	2	3	4	5	6
19D4003	121.8	203.5	51.8	67.5	75.0	75.0
26D4003	166.0	68.0	82.7	378.0	200.0	200.0
32D4003	183.4	80.3	142.1	496.4	200.0	200.0
22D5003	157.6	268.8	53.8	68.8	75.0	75.0
40D5003	236.3	159.4	196.6	604.7	200.0	200.0
32D40*	235.8	50.7	125	542.7	200	200